

OCCUPATIONAL EXPOSURE TO DISINFECTANTS AND ADULT-ONSET ASTHMA IN U.S. NURSES – PRELIMINARY RESULTS

Nicole Le Moual: *Inserm, CESP Centre for research in Epidemiology and Population Health, U1018, Respiratory and environmental epidemiology Team, F-94807, Villejuif, France and Univ Paris Sud 11, UMRS 1018, F-94807, Villejuif, France*

Raphaëlle Varraso: *Inserm, CESP Centre for research in Epidemiology and Population Health, U1018, Respiratory and environmental epidemiology Team, F-94807, Villejuif, France and Univ Paris Sud 11, UMRS 1018, F-94807, Villejuif, France*

Jean Paul Zock: *Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain and Municipal Institute of Medical Research (IMIM – Hospital del Mar), Barcelona Biomedical Research Park (RBB), Doctor Aiguader 88, 08003 Barcelona, Spain*

Frank E. Speizer: *Harvard Medical School, Channing Laboratory and Brigham and Womens Hospital, Department of Medicine 181 Longwood Ave, Boston, MA 02115 USA*

Francine Kauffmann: *Inserm, CESP Centre for research in Epidemiology and Population Health, U1018, Respiratory and environmental epidemiology Team, F-94807, Villejuif, France and Univ Paris Sud 11, UMRS 1018, F-94807, Villejuif, France*

Carlos A. Camargo Jr: *EMNet Coordinating Center, Massachusetts General Hospital and Harvard School of Public Health, Department of Epidemiology, 326 Cambridge St, Suite 410, Boston, MA 02114 USA*

Background and Aims: Recent studies suggest a deleterious role of cleaning and disinfecting products on asthma in healthcare workers. Our aim was to examine the association between current occupational exposure to disinfectants and adult-onset asthma in nurses.

Methods: Out of 57,259 women from the Nurses' Health Study II who responded to the 2009 questionnaire and for whom data were already available (at 01/2011), we investigated the association between current job type and current exposure to disinfectants with adult-onset asthma, in 47,391 nurses without asthma at baseline (in 2007) and without missing values for exposures or job. The current use of disinfectants for instruments or surfaces (never(ref), <1day/week, 1-3days/week, 4-7days/week), and current job type: nursing in hospital units (education or administration(ref), ER or ICU, operating room, other inpatient nurse, outpatient, other hospital nursing), nursing outside hospital, non-nursing employment, retired or homemaker, were recorded in the 2009 questionnaire. Data analyses used multivariable logistic regressions, with adjustment for age, smoking status, and body mass index.

Results: New cases of adult-onset asthma was reported by 756 participants (two-year cumulative incidence, 1.6%), women had an average age of 55years, 63% were never smokers, and 43% had a BMI<25kg/m². Approximately 31% of nurses reported weekly exposure to disinfectants (12% reported exposure 4-7days/week), varying from 11% (3%, 4-7days/week) for nursing administrative to 70% (40%, 4-7days/week) for operating room nurses. We found significant positive association between occupational exposure to instrument or surface disinfectants and adult-onset asthma (OR [95%CI] for a use 4-7 days/week vs. never: 1.26 [1.01-1.57]). By contrast, no association was found between current job and adult-onset asthma.

Conclusions: Preliminary results from this large cohort study support the hypothesis that regular exposure to disinfecting tasks among nurses is an important risk factor for adult-onset asthma. Exposure to disinfectants may represent an important health issue among healthcare workers.